

9/1/02

VOLUMETRICS

**CERTIFIED
HOT MIX ASPHALT
PRODUCER PROGRAM
PARTIAL AUDIT CHECKLIST**

Date _____

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Plant No. _____

Producer _____

Plant Location _____

INDOT Audit Team Members

	<u>Name</u>	<u>Position</u>
1.	_____	Technician
2.	_____	_____
3.	_____	_____
4.	_____	_____

Producer Members

	<u>Name</u>	<u>Position</u>
1.	_____	Certified Asphalt Tech.
2.	_____	_____
3.	_____	_____
4.	_____	_____

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GENERAL INSTRUCTIONS

401 QC/QA Hot Mix Asphalt (QC/QA HMA)
402 Hot Mix Asphalt (HMA)
Volumetric Quality Control Plan (VQCP)
Approved Supplier Certification (ASC)
Job Mix Formula (JMF)
Design Mix Formula (DMF)
Reclaimed Asphalt Pavement (RAP)

Any square bracket marked by an X on the Audit Checklist requires a Corrective Action Sheet to be prepared. The Corrective Action Sheet will be prepared when a deficiency is found, and a copy given to the Producer by the end of the audit. All other square brackets shall have a check, if the item is satisfactory, or NA if not applicable.

Begin the audit by reviewing the VQCP before arriving at the Producer's site. Likewise, checklists prepared during previous audits, especially the last one, will be reviewed.

1. DOCUMENTS

ITM 583 Reference
2.0

Determine whether the following documents are on file at the Producer's Plant.

1.1 [] Weigh tickets indicating material from an ASC Producer

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2. DIARY

ITM 583 Reference
8.0

Select at random one active production week for review of the diary. The diary shall be in accordance with the following requirements and information. Contact the Project Engineer/Supervisor, if necessary, to determine the days of production.

- 2.1 [] Mixture produced and quantity
- 2.2 [] DMF or JMF number
- 2.3 [] Contract or purchase order number the mixture was sent to
- 2.4 [] Time samples obtained and tests completed (Samples are required to be tested within 48 h of the time the sample was taken. If all samples are tested the same day, a statement indicating that this occurred is acceptable)
- 2.5 []* Significant events or problems
- 2.6 [] Signature of Certified Technician
- 2.7 []* Other persons signature counter-signed by Certified Technician

Any nonconforming test shall be followed immediately by corrective action. A nonconforming test occurs for Aggregate Stockpiles, Blended Aggregate, Mixture Binder Content, RAP Binder Content, Air Voids or VMA when the single test control limits are exceeded. For moisture content a nonconforming test occurs when the moisture content of this mixture sampled at the Plant exceeds 0.3%. Search control charts and test data for nonconforming tests. If some are found, review the diary on the date of each test for notations regarding action taken.

- 2.9 [] Nonconforming test(s) are noted in diary
- 2.10 [] Corrective action was taken

* Only If Applicable

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3. SAMPLING AND TESTING

ITM 583 Reference

9.0

*Perform calculations for **QC/QA HMA** mixture as needed and compare the quantities produced from the diary for the week being reviewed against the number of tests, thereby determining the frequency of testing. The previous or subsequent week in the diary may need to be obtained to verify the frequency of tests.*

- 3.1 [] Sampling and testing of Blended Aggregate for gradation is in accordance with VQCP
- 3.2 []* Sampling and testing of Aggregate Stockpiles for gradation is in accordance with VQCP
- 3.3 [] Sampling and testing of Mixture at the Plant for binder content, temperature, and moisture content is in accordance with VQCP
- 3.4 [] Sampling and Testing of Mixture from the pavement for Air Voids, VMA, binder content, and moisture (surface mixture only) is in accordance with VQCP
- 3.5 []* Sampling and testing of Recycled Materials for binder content, gradation, coarse aggregate angularity, and moisture content is in accordance with VQCP

* Only If Applicable

Plant # _____

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SAMPLING AND TESTING (continued)

ITM 583 Reference
9.2

Obtain the diary for one **HMA** mixture produced during an active one month period. Perform calculations as needed and compare the quantities produced from the diary against the number of tests, thereby determining the frequency of testing. The previous or subsequent month in the diary may need to be obtained to verify the frequency of tests. The frequency of sampling and testing shall be in accordance with the VQCP, but not less than

1. The first 250 t and each subsequent 1000 t of each DMF or JMF for base and intermediate mixtures.
 2. The first 250 t and each subsequent 600 t of each DMF or JMF for surface mixtures.
- 3.6 [] Sampling and Testing of Mixture for binder content, coarse aggregate angularity, gradation, and air voids is in accordance with VQCP.

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SAMPLING AND TESTING (continued)

ITM 583 Reference
9.0

Select randomly one test report for any one **QC/QA HMA** mixture and check the calculations performed for the Blended Aggregate and Mixture. If only **HMA** mixture is produced, check the calculations for the **HMA** only.

Blended Aggregate

- 3.7 []* Gradation of aggregate from cold feed belt or belt discharge is calculated correctly (Drum Plants)
- 3.8 []* Gradation of aggregate from each hot bin is calculated correctly and blend calculations are correct (Batch Plants)
- 3.9 []* Gradation of aggregate from mixture sample is calculated correctly
- 3.10 []* Moisture content of aggregate is calculated correctly

Hot Mix Asphalt -- Location of Sample _____

- 3.11 []* Gradation from Mixture sample calculated correctly
- 3.12 []* Moisture content calculated correctly
- 3.13 [] Binder content calculated correctly (Fines correction, if required, is used in calculation)
- 3.14 []* If Ignition Oven is utilized, correct calibration factors are used
- 3.15 [] Bulk Specific Gravity calculated correctly
- 3.16 [] Maximum Specific Gravity calculated correctly
- 3.17 [] Determination of Air Voids and VMA calculated correctly

* Only If Applicable

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4. MIXING PLANT

ITM 583 References
13.2 (d,e,h,j,m)

Inspect the site and observe the operation of the Plant to verify that the production process is in accordance with the VQCP.

Material Stockpiles

- 4.1 [] Stockpiling procedure is in accordance with VQCP
- 4.2 [] Stockpiles are adequately spaced and not contaminated
- 4.3 []* All stockpiles have signs as indicated in VQCP
- 4.4 []* Stockpile map is current and located as indicated in VQCP
- 4.5 [] Cold bin loading procedure is in accordance with VQCP

Anti-Adhesive Agent

- 4.6 []* Anti-adhesive agent is product on Approved List
- 4.7 []* Procedure for application of anti-adhesive agent is in accordance with VQCP

Truck Loading

- 4.8 [] Procedure for loading trucks is in accordance with VQCP

* Only If Applicable

5. MATERIAL SAMPLES

The Producer's Certified Technician shall obtain a sample of the RAP, if applicable, the blended aggregate, or the mixture at the discretion of the INDOT Technician. The sample obtained shall be split by the Producer's Technician and the Department's portion given to the INDOT Technician. The sample shall be tested by both the Producer and INDOT.

Sampling and sample reduction procedures required by the VQCP for the sample obtained shall be observed to verify that they comply with the corresponding checklists.

- 5.1 ☐ Sampling procedures are correct
5.2 ☐ Sample reduction procedures are correct

The following test results will be determined. A copy of the test report from both the INDOT Technician and the Producers Technician will be attached to the audit checklist. The variation of test results will be shown in the remarks section of the INDOT Technician's report. The allowable variation will be as follows:

<u>Sieves</u>	<u>Maximum % Difference</u>
1 in.	5
3/4 in.	5
1/2 in.	5
No. 8	3
No. 30	3
No. 200	3
<u>Binder Content</u>	
*RAP	0.5
Mixture	0.5

- 5.3 ☐ Gradation of blended aggregate is within limits
5.4 ☐* Binder content of RAP is within limits
5.5 ☐ Binder content of Mixture is within limits

* Only If Applicable

Plant # _____

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6. AUDIT CLOSE-OUT

The Audit Close-Out meeting with the Producer will be conducted at the completion of the audit. The results of the audit will be discussed, and all outstanding matters will be completely resolved or solutions with deadlines will be established. When the INDOT test results of the split samples are complete and results analyzed, an additional meeting with the Producer will be necessary to discuss the results.

When all the results from the audit have been accumulated, including Audit Checklist pages, Sampling and Sample Reduction Checklists, INDOT test report, Corrective Action Sheet(s), and other documentation as may be appropriate, the Area Supervisor will review the documents to verify that they are prepared properly and complete.

Upon completion of the Audit, all documents will be sent to the District Materials and Tests Engineer.

Asphalt Technician

Date